Status Report
on
“GNSS Application Catalogues”
User Requirement and User Questionnaire

By ICG WG-B Application Subgroup

Dr. Jun SHEN, UniStrong, China
Dr. Izumi MIKAMI, SPAC, Japan

Dec.10, 2019
OUTLINES

1. Activities after Xian ICG-13 & Vienna meeting
2. Final structure of Questionnaire for Review
3. 1st draft of Application Catalogue & Source of Each Content for Review
4. Follow-up of Near Term Plan Shown in Vienna
5. Discussion
ICG-WG B Application Subgroup:
Activities after Xian ICG-13 & Vienna MTG

Surveyed on existing reports on GNSS user requirement
Dec. 208-Jan 2019

Improved Questionnaire to minimize potential overlap with
published information
Apr. -May 2019

Established the final draft of Questionnaire for members
review & the first draft of GNSS Application Catalogue to
start discussion
May- Jun 2019

Made interim report on Questionnaire & Application
Catalogue in Vienna & received request to start Questionnaire
pending check of GNSS vulnerability questions and consent
by other Working Groups.
Jun 12, 2019

Issued request for feedback from other Working Groups on
questions on GNSS vulnerability issues via WG-B cochairs.
July 2019

Sent memo to all AppSG members and PoCs to check AppSG
members names at each PoC, share Vienna report and request
review & comment on accelerate SG activity. Aug. 2019
Final structure of Questionnaire for Review

Purpose and policy including privacy information protection

Guide for contributors to minimize answers per background

Category A Questions to investigate contributors background

Category B Questions targeted to professional Rx users/manufacturers

Category C Questions targeted to scientists/researchers/students in GNSS tech. field

Category D Questions targeted to everyone including ordinary smartphone users

Ordinary s-phone users: A+D
Pro. Rx users/manufacturers: A+B+C
Scientists/researchers/students: A+C+D

5 questions

20 16 questions
(Questions for drone owners omitted.)

22 19 questions
(Questions common to Category C omitted.)

21 questions
1. Introduction
2. GNSS service trend of the world
   2.1 Positioning and navigation by GNSS and RNSS
   2.2 Timing
   2.3 Messages
   2.4 Search and rescue
   2.4 Others
3. The world status of GNSS application
   3.1 Professional areas
   3.2 Consumer areas
   3.3 Academic and special areas
   3.4 Others
4. Occurrence status of GNSS signal vulnerability problems
   4.1 Multipath
   4.2 Spoofing
   4.3 Jamming
   4.4 Others

Utilize published reports with reference
Use Questionnaire answer data
Use Questionnaire answer data
5. How to increase GNSS application
   5.1 GNSS services
   5.2 Technology fusion
   5.3 Sensor fusion
   5.4 Augmentation
   5.5 Seamless PNT
   5.6 System fusion
   5.7 Others

6. How to mitigate GNSS signal vulnerability problems
   6.1 GNSS services
   6.2 Ground infrastructure
   6.3 Receivers
   6.4 Integrators
   6.5 Liability protection

7. Possible future GNSS+ application
   7.1 TBD
   7.2 TBD
   7.3 TBD

8. Annex
   8.1 Cool and "hottest" consumer application
   8.2 TBD
Follow-up of Near Term Plan Shown in Vienna

- Distribute, via representatives, co-chairs letter; “Request for members collaboration to APP-SG activity “ with “Questionnaire (Final Draft)”, and “Application Catalogue Table of Contents (for discussion)” to start our activity as a team. (by Jun 25)  
  
  DONE

- All SG members will exchange opinions via e-mail and set up target date of completion of the answer collection, data processing, etc., and regular follow-up system including interim meetings to realize each target date. (by the end of July)  
  
  AWAITING

- Target date of draft of the Application Catalogue will be also set up by APP-SG. (by the end of July). The timing of Application Catalogue publication is still TBD, but hopefully by the end of this year.  
  Subject to consent of other WGs on GNSS vulnerability questions

- Also we pick up hints from the answers, and establish the next theme to study in APP-SG with regard to GNSS+ application.  
  Subject to consent of other WGs on GNSS vulnerability questions
Discussion

● Should everyone think it worthwhile to go forward with the current project, we need more proactive participation and cooperation.

● Provided the GSA’s comprehensive market report, an alternative would be to use it as a basis, and we should investigate additional requirements which WG-B members are interested in.

● Any specific interests to be included in the Application Catalogue/Questionnaire, or should we start new projects that the WG-B is more interested in?